

NOTES ON WHIP-POOR-WILLS AND OWLS.

BY FRANK BOLLES.

With a Foreword by William Brewster.

EIGHTEEN years have come and gone since Frank Bolles died. It was fittingly said at the time of his death: "Harvard College may get another Secretary but not another Frank Bolles." Equally evident then as now was the fact that precisely the place he filled and the service he rendered as a nature student and writer could never again be made good. For he possessed qualities which in combination — if not severally — were well nigh unique. Although romantic by temperament and gifted with rich imagination he was exceptionally accurate of observation and no less careful of statement, seeing things exactly as they were and afterwards describing them exactly as he had seen them, in language admirably terse, yet so vivid and so picturesque that one could not help wondering at its beauty and effectiveness. Moreover he had it ever at command and was so able to concentrate his thought that some of his most charming and perfectly finished essays were written within the space of an hour or so, in the family sitting room, with half a dozen people close about him talking — he himself perhaps contributing more or less to the general conversation. Unlike most men who have won distinction as field naturalists he took no conscious interest in nature during early boyhood but in 1876, when nineteen years of age and at Dean Academy, Franklin, Massachusetts, he wrote in some notes which Mrs. Bolles still possesses that he was "thoroughly fascinated" with the study of "bird habits and peculiarities." It does not seem to have engaged his serious or at least continued attention, however, until 1884 or 1885 when he set about it with characteristic energy and intelligence, thereafter devoting to it most of the time not required for the performance of professional or family duties. By night as well as by day, at all seasons and in every kind of weather, he was afield in the region about Cambridge or in that accessible from his summer home at Chocorua, New Hampshire — while occasional trips were undertaken to remoter places such as

Cape Breton. Many a man of similar field experience has failed to profit greatly by it; but Frank Bolles was accustomed to so direct and systematize whatever work he had in hand as to make it yield the best possible results and by personal observation chiefly, within a period extending over not more than ten years, he became intimately acquainted with many of our New England birds besides ascertaining facts concerning some of them which had not previously been known to any one. Unfortunately he had scarce begun to draw on this rich store of original information for purposes of publication when his life came prematurely to an end. Nor had he committed much of it to paper in any form, being accustomed to rely largely on a memory so perfect that it rarely failed and never misled him. He left, however, some finished manuscripts which Mrs. Bolles has published since his death in two volumes entitled respectively "From Blomidon to Smoky and Other Papers" and "Chocorua's Tenants"; the latter book consisting of a collection of original poems relating — with a single exception — to familiar birds. There were also a few pages of field notes — written on the backs of printed lists of Harvard Professors which Mrs. Bolles has most kindly placed at my disposal, thereby enabling me to offer them to the editor of 'The Auk' who has accepted them with an eagerness which does credit to his known appreciation of everything especially precious in ornithological literature. Since he proposes to print them as nearly as possible in their original form, and also to reproduce by photographic process a portion of the manuscript with some pen and ink sketches which accompany it, they may safely be left without further word from me, to testify — even more convincingly perhaps than have any of his finished printed essays — to the extraordinary care, precision, patience and intelligence with which Mr. Bolles was accustomed to pursue his field studies of birds.— W. B.

With the Whip-poor-wills.

July 5th. 8.25, on stone heap E. of barn. 8.27, stone W. of well. 8.33, hears other down by lake and disappears instantly. Whip. down by lake about $\frac{3}{4}$ minute later whips very much faster than usual. 8.45 Whip. II whips a few times bet. house and lake.

July 7. 8.35-45. "Quip o rip (or ri)." At 8.20 I went to stone W. of well and hid under the narrow fringe of *Spirea* bushes, 2½ ft. high only 3 ft. from stone. No wind bright moonlight. I lay flat on my stomach, and shook bushes well over my legs and snarled them over my body. Then resting my chin on my hands and holding my soft brown cap over my mouth and nose I waited. Mosquitoes, flies and midges simply hellish. I suffer torments. I wait 15 minutes. Five pass in utter silence as far as whips. are concerned. Then at 8.25 two begin down by lake, and continue about 5, shifting some. By 8.34 one had got to stone heap by barn. I know he will come to me next and I shake myself, rub off skeets and wait. Suddenly I hear a rather feeble whip, 12 times S. of me, then silence and then a bird flies to the stone in front of my face, coming low over the bushes and lighting with its tail towards me. It squeaks or clicks three times, and I fear it suspects me and is giving a slight alarm note, but the next moment it begins the piercing *quip o' rip* slightly raising its head and dipping its tail each time it makes the sound. The head rises on the *quip* and falls on the *rip*. The wings do not move, nor the body save by slight tipping. I could see the bird's outline perfectly against the white background of the shingled barn on which the moonlight fell fully. It uttered its note about twenty or thirty times when to my astonishment another whip. alighted near it, on the left (W.) end of the boulder. One or two sounds like the soft popping of corn came from the new arrival, and the first bird, which had ceased its call, faced west and began a strange, slow dance, advancing a step at a time towards its mate, raising its body to the full length of its legs at each step, thus making a sort of undulating approach. The other bird remained where it alit, but seemed to be moving its body up and down or else slowly pulsating its wings. The first bird, which I think was the male, seemed to continue its dance entirely around the female. As he passed her, indescribable purring and popping sounds were made and one of the birds flew lightly away. — the ♀ I think. The male resumed his first position, and remained silent. Then he rose and circled in the air, catching an insect I thought, for he came back at once to the spot on the rock which he always covers. A moment later his mate seemed to call from below the house,

near the lake, and he flew, his white feathers flashing as he spread his tail, and the strokes of his wings making a distinct and quite loud sound as he passed close above my head.

July 8. Went out at 8.20. Bird began by barn by 8.25, and remained there five to eight min. Then went further, came back, and not until about 8.40 did he reach my stone. He came very low, made a half circle to the right and alit. No suspicion of me, although this time I had crawled up so that he was within long arm's reach. He began whipping at once and the sound was really deafening I forgot the mosquitoes and midges in listening. My heart beat violently and in my cramped and uncomfortable position I trembled so that the bushes swayed. He minded not. Once I swallowed and made a slight sound in my throat, as my head was jammed back on my shoulders. He stopped instantly and listened. After 50-60 whips he whirled up into the air and then returned, this time a foot farther away from me but facing me. The sound was even more intense and I could see his white throat move. He shifted his head from time to time and the direction of his beak regulated the carrying power of the sound remarkably. As I heard it tonight under the most favorable conditions possible the sound spelled out was *a-c'rip-o-ri*. The "a" being the cluck. The last note is open. Watched very closely there proved to be very little motion in the head, tail or body — considering the violence of the sound. No reply came to the whipping and no visitor. So after about seven to 10 minutes, probably less, my bird flew away, after an interval of silence. He went to the stones near the brook, and I followed to locate him. He went but later came back about 9.30, and his mate came too, as their extraordinary purring attested. He also went back to my stone, showing thereby no fear or suspicion. It was a strange feeling to be so near a living bird singing such a strange song, at night. Wind N. N. W. Moon full and perfectly clear. About four other whips audible. Remarkable regularity in time, place, attitude. An odd character all round.

July 9. Took my place at 8.20. Bird came about 8.30 after having been by barn as usual. He flies just over top of fence, slightly rises, wheels and faces the way from which he came. He began whipping without prelude and whips about 50 times, all

the while keeping his head moving now to right, now to left. Then he was silent. While he whipped his mouth seemed to open and shut with each whip. It was light enough for me to feel quite sure of this at first. His silence was broken by a sound which I thought was not connected with him. It was a sort of low snoring reminding me slightly of the dry sound produced by rubbing one's thumb over a smooth piece of wood, or the inside of the closed forefinger. He made this sound three times, and a second later said "whip" sharply once. He was answered by a similar single note from the fence or wall a few paces away, and with a flash of his white spots he was gone. He said "whip" once or twice on or near the fence, and then went further. From the fence I was much more likely to be seen than from any other quarter, and I think his mate refused to join him on the rock owing to my dark presence. I was near enough to him while he was whipping to have reached out my hand and touched the spot on which he stood.

As the bird sits flat on the rock its wings show their tips clearly over the tail.

Once later before I stirred, he came into the dooryard and sang cheerfully from the woodpile or the kitchen steps — an unusual proceeding.

Aug. 9. Every night thus far the whips. have sung, and I heard them this a. m. at 4 o'clock. For a month my whip. has not been on his rock to sing. Once about July 30 I heard him purring there at 8.30 p. m. Last night while I was eating a late sup. after being at Heron Pond till 7.30 I heard one say "whip" either on or just beyond the back piazza. Six were audible at Heron Pond about 7 p. m., one on the shore. As a rule, but with marked exceptions, they say whip-poor-will on three or four times running instead of 60-100 or 150 as a month ago. Full moon makes no apparent difference.

Aug. 29. Have heard no whips. since Aug. 21, a. m. Aug. 29, heard them this evening.

Sept. 4. Whips. going a while each evening.

Sept. 11, 12, 13. Whips. going on the stone. Several times 3 nights running.

Sept. 21, 22. Whip. around barn, on bracket on roof, clucks

3. Whip-poorwill He was aroused by a similar single note from the fence or wall a few paces away, or with a flash of his white spots he was gone. I said "Whip" once or twice on or near the fence, & then went further. From the fence I was much more likely to be seen than from any other quarter & I think his mate refused to join him on the rock owing to my dark presence. Was near enough to him while he was whiping to have reached out my hand & touched the spot on which he stood.

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when I "whip." Flies near his stone, clucks in the woods,—flops into cherry tree. Have heard no full song for several days.

23. Several full song many times, 6.30 p. m.

Owl Notes.

I wrote my article for 'The Auk'¹ late in December, and early in January. The owls have not bathed much during the winter perhaps because I have not been regular in giving them fresh water. Fluffy ate nothing, so far as I could ascertain between Dec. 15 and Feb. 1. About this time I began to make efforts to vary their diet. I gave up kidneys and gave them mice, grouse wings and heads, a rabbit and fish heads. Fluffy was won over by mice into open eating. Early in February I enlarged their space by making a wire room outside their closet. About three weeks later I gave them half the cellar enclosed in wire netting and built them a hollow tree of barrels. It was about February 10 that I noticed their gathering of material in one corner of a shelf in their closet. Feathers, cotton batting, and dry leaves were placed in a flat layer over the board. It is now March 16, and I am satisfied that they keep constant watch of this place. They remove any additional material which I place near the flat bed. Just about a week ago I began giving them eggshells and eggs. During the week they have eaten the shells of nearly two dozen eggs. For example, this morning I gave them the shells of six eggs covered with the contents of one store egg. Both owls were hungry and they went for the dish in haste. Every considerable part of shell, membrane and yolk etc. was eaten within ten minutes. The taste of the fresh egg pleases them greatly and they crackle the shell in their beaks with evident enjoyment. Fluffy is expert in catching mice or grouse wings thrown into the air. Both birds have fully regained their appetite. A large haddock head is devoured in 48 hours, practically nothing is left of it, except the two largest bones and not always those. I am feeding them light. This week they have had five mice, one fish head, two eggs and the mass of egg shells. They no longer show much interest in the cat when she walks about the cellar floor outside their pen. About a week ago both birds got out through a corner of the wire netting next the floor. I do not

¹ Cf. 'The Auk,' 1890, pp. 101-114.

understand their finding the place. One might have but why both? They have been restless during the early evening for 6-8 weeks or more. I can tell now when they fly about much, because their roosts jar the wire netting when struck in alighting. Once each evening they or one of them hoots or crows. Tonight (16 March) it was at 6.40. Last evening it was 6.55. For many nights it seemed to be at about 8.15 to 9. Later they are perfectly still. Puffy bathed today the second time this week. I had just given them fresh water. I do not note any interest in the barrel tree, although they spend much time in that corner, back of the furnace.

March 5, 1891. It is nearly a year since I wrote the above and I am ashamed that I have not kept better notes of what I have done with my pets. The summer was not one of much activity. My family went to Chocorua April 29, and I followed them finally July 4, or 6, I forget which, I overworked the last few weeks and was far from feeling well all summer. I spent much time in July and early August in watching Sapsuckers, and later L. and I spent ten days at Mt Desert with the Eliots. I was called back to my desk about September 18, and the family came home about October 1. I was laid up with a dislocated ankle. After my writing the March notes last spring the owls did nothing marked. They scattered their nest materials and forgot them. They moulted freely and feathered out finely later in the summer. My notes about Scops are noted elsewhere also about the three young Scops. I tried Puffy on Nighthawk, Whippoorwill, Sandpiper, Woodcock, Hummingbird, Kingfisher, Red-tailed Hawk, Blue-headed Vireos, Barred Owls, Water-thrush, Chewinks, Flock of Blue Jays, large flock of Crows, on Plovers, Loon, the Scops, Snowy Owl; with various results. By way of new food I gave them earth worms in quantities, fresh water mussels which they ate greedily. Snakes of various kinds of which they used to be in terror and which they ate freely, sometimes doubled and squirming alive. They continued to catch live perch and breem, Chipmonks and mice. Puffy caught Chipmonks most successfully. Fluffy was n. g. with them. I used Fluffy all summer and once or twice took out both together. A tap on Fluffy's head at Heron Pond nearly killed him. The skull is awfully thin. I never punish them since that.

Mr. E. C. Mason brought me little Scops on the evening of Thursday April 17. He brought him in a basket in which he had been confined for a day or two. He was captured in Arlington on the 15th. He was sitting in the mouth of a hollow in a tree, and looked like a dead stick poked into the hole. Mason said he was motionless but suddenly fell into the hole as a stick would slip in — without a wiggle. He did not offer to bite Mason. Mason brought him to me about 8, p. m; I brought up Puffy and Fluffy to the library and then let out Scops who flew about. At first Puffy and Fluffy only watched him with curiosity but later Fluffy did his best to catch him, dodging and circling over the gas jet. I took the big owls away and stroked Scops freely. That night he spent in the back cellar. The next morning he flew against the netting of Fluffy's cage and Fluffy struck for him full force. Scops let go and flew back or Fluffy would have clinched him through the wires. I at once saw plainly that they could not live together, so Scops was taken up to Olive's room and left in possession. Friday he ate nothing. On Saturday morning he had eaten some meat, scraps of chicken entrails, and had drunk. He permits the freest possible handling, caressing etc. Will sometimes hang head downward by his feet — as though dead — or lie on his back in the palm of my hand with eyes closed and no visible motion. On Saturday morning I dragged a dead mouse across his floor by a thread and he pounced instantly and crushed the nape of the neck, pulled off pieces there, then severed the head and swallowed it and then swallowed the whole body. Sunday he did the same. The next day he saw me bring in a mouse and pounced on it almost as soon as it touched the floor. Monday 2 p. m. I caught a sparrow in my box trap but he took no notice of it until night although it flew by him again and again for hours. After 10 p. m., I shut him up in a closet with the sparrow and in the morning he had eaten all but a small lot of feathers, some stiff, some soft. Tuesday I gave him nothing. Wednesday a. m. I gave him a dead robin. He began by eating the right eye and then tearing away scraps from around the wound.

Thursday or Friday I found him dead. Mason after dissection concurred in my theory that he died from injury to the brain due to beating his head against a wire netting at the window.

In June or May sometime Batchelder sent me three young Screech Owls. I sent them up to Chocorua. They were grey and lovely but with awful tempers and harsh voices. Two were later returned to him, and again sent up to Crowlands. They had lost their good feeling toward the one left with me and abused him somewhat, shunned him always. At last, late in August I think it was, I found him dead and *plucked* in the cage. A week or two later I put the survivors into a barrel with a live mouse. Neither caught it. They quarreled and the next morning one of them was dead and partly plucked. The day following the other died. I clipped all of their wings and took out the one not returned to Batchelder several times. He drew birds if they saw him but he often made a stump of himself and evaded observation. They were fond of small birds, mice, fish, and so-so of liver.

THE RELATION OF GENERA TO FAUNAL AREAS.

BY SPENCER TROTTER, SWARTHMORE COLLEGE, PENNSYLVANIA.

THE relative antiquity of a genus is probably indicated by the greater or less departure of its several species and their varietal forms from a common ancestral type. The degree of departure may be the resultant of two opposing factors — first, the influence of conditions favoring segregation, as the character of the vegetation and the variety of habitat within the breeding range, and, secondly, the opposing factor, that of the inherent quality of resistance in the common ancestral type against the disrupting influences of environment and of variational tendencies. It is in the breeding ground or faunal area that we must look for the conditions which produce these changes in epidermal tissue and those minor departures in voice and habits that we recognize as constituting distinctive specific and varietal differences within a genus. These influences are operative in the breeding area at the period of greatest plasticity of the organism, and variations from